

PATENT

ATTORNEY DOCKET NO.: BIT-12

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:
ANTHONY S. BRADLEY) Examining Attorney: Raymond W. Addie
Serial No.: 09/612,810)) Group Art Unit: 3671
Filed: July 10, 2000))
Title: APPARATUS AND METHOD FOR DEPLOYING GEOTEXTILE TUBES

APPEAL BRIEF

Honorable Commissioner of
Patents and Trademarks
Washington, DC 20231

Sir:

Applicant hereby submits this Appeal Brief in accordance with 37 CFR § 1.192 for the caption application, the Notice of Appeal having been mailed on September 23, 2002, in accordance with 37 CFR § 1.8.

If any fee or extension of time is required to obtain entry of this Appeal, applicant hereby petitions the Commissioner to grant any necessary time extension, and the undersigned hereby authorizes the Commissioner to pay from Deposit Account No. 04-1403, any such fee not submitted herewith.

1. REAL PARTY IN INTEREST:

The real party in interest is Bradley Industrial Textiles, Inc., a closely held corporation that is the assignee of the applicant's entire right title and interest.

2. RELATED APPEALS AND INTERFERENCES:

None.

3. STATUS OF CLAIMS:

Claims 7, 9, 10, 12, 36, 44 and 73-75 have been canceled.

Applicant appeals all of the pending claims 1-6, 8, 11, 13-35, 37-43, 45-72, 76 and 77, which are under final rejection (Paper No. 11) mailed on April 23, 2002.

Claims 1, 5, 6, 8, 11, 13-16 and 19-21 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over US Patent No. 5,158,395 to Holmberg ("Holmberg '395") in view of US Patent No. 5,125,767 to Doolage ("Doolage").

The Office Action Summary of the Final Rejection states that claims 1-6 are rejected. However, the Final Action did not provide the reason for rejecting claim 4. When the undersigned informed the Examiner of this omission, the Examiner determined that the omission occurred due to a typographical error by the Office. The Examiner provided the reason for the rejection of claim 4 during a telephonic interview. The reason is stated in the Examiner Interview Summary Record, which is dated November 4, 2002. Accordingly, claim 4 stands finally rejected under 35 U.S.C. § 103(a) as unpatentable over Holmberg '395 in view of Doolage.

Claims 22-24 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Doolage in view of Holmberg '446. Holmberg '395 issued from a continuation application of Holmberg '446, and therefore the disclosures of Holmberg '395 and Holmberg '446 are identical. Accordingly, both Holmberg '395 and Holmberg '446 shall be referred to herein by just "Holmberg."

Claims 2 and 3 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Holmberg in view of Dooleage as applied to claim 1, and further in view of US Patent No. 5,902,070 to Bradley (hereinafter "Bradley").

Claims 17 and 18 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Holmberg in view of Dooleage as applied to claim 16, and further in view of US Patent No. 5,902,070 to Bradley.

Claims 25, 31, 33, and 34 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of US Patent No. 4,555,201 to Paoluccio ("Paoluccio").

Claims 26-30 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of Paoluccio as applied to claim 25, and further in view of Holmberg.

Claim 32 stands finally rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of Paoluccio as applied to claim 31, and further in view of US Patent No. 5,232,429 to Cizek et al ("Cizek et al").

Claims 35, 37-43, 45 and 49-75 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of Bradley.

Claims 46-48 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of Bradley as applied to claim 45, and further in view of US Patent No. 3,911,170 to Honjo et al ("Honjo et al").

Claims 42 and 43 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of GB 1,487,986 to Labora ("Labora").

Claims 76 and 77 stand finally rejected under 35 U.S.C. § 103(a) as unpatentable over Bradley in view of Doolage.

4. STATUS OF AMENDMENT:

An Amendment After Final Rejection canceling claims 44, 73-75, and requesting reconsideration of claims 1-6, 8, 11, 13-35, 37-43, 45-72 and 76-77 was filed on September 23, 2002. An Advisory action was mailed on 10/21/2002, entering the Amendment After Final Rejection and maintaining all of the rejections noted above.

5. SUMMARY OF INVENTION:

As set forth in the preamble to the patent application claims that are on appeal, the present invention relates to systems, structures and methods for maintaining fill material solids in position to form a barrier or dam. These structures, methods and systems that are the subject of this application are called upon to resist some of Mother Nature's most powerful and unpredictable forces.

For the basic structure described in claims 1, 6, 16, 25, 31, 35, 42, 45 and 62, referring to Figs. 1-3 and page 11, lines 17-20 for example, a presently preferred embodiment of the apparatus includes a geotextile container 14. Referring to Fig. 8A and page 11, lines 23-25 for example, it can include an elongated sheet 17 of geotextile material formed into a tubular-shaped container 14 having an inside space. Referring to Fig. 3 and page 28, lines 12-19 for example, at least two ballast tubes 28 are disposed within the inside space of the container 14.

Concerning claims 1, 6, 16, 22, 23, 25, 31, 35, and 42, with fill material solids 31 being held within the ballast tubes 28, refer to page 28, line 2 through page 29, line 18.

Concerning claim 45, with the ballast tubes 28 holding water, refer to page 29, lines 19-21.

Concerning claim 51, with fill material solids 31 being held within the container 14, refer to page 24, line 2 through page 25, line 2.

Concerning claim 4, refer to page 15, lines 1-11.

Regarding claims 6, 8, and 26 as described at page 21, lines 2-3, a pair of cradle tubes 34 (Figs. 2 and 3) can be placed on either side of the container 14 to form a cradle there between.

Regarding claim 11 as described at page 7, line 24 through page 8, line 6 and page 21, lines 23-25, each cradle tube 34 can contain more than one filler tube 33.

Concerning claims 13-15, 19-21, and 27-30 as explained at page 19, beginning at line 13, and shown in Figs. 2, 3 and 6, a blanket 29 forming a scour apron can be held in position by anchor tubes 30.

Concerning claims 22-24, the method is described beginning at page 25, line 25 and referring to Figs. 12A, 12B, 12C, 12D, 12E, 12F, 12G, 12H, 12I and 12J.

Concerning claim 25, with its solid fill material in a lower portion of a ballast tube and a liquid in the upper portion of the ballast tube, see the specification at page 6, lines 15-19, and beginning at page 27, line 17 through line 19 on page 28.

Concerning claims 31 and 45, wherein water is capable of moving into or out of the ballast tubes with semi-permeable ballast tubes for example, with the outer container being substantially impermeable, refer to page 32, lines 1-14.

Concerning claims 17, 18, 32, 34, 46 and 47, with the impermeable coating on the first elongated tube of geotextile material, refer to page 13, lines 10-25, page 30, lines 11-15, page 31, lines 3-7; and page 32, lines 21-25 and lines 14-18 for example.

Concerning claim 47, with the impermeable coating on the exterior surface of the first elongated tube of geotextile material, refer to page 32, lines 14-18 for example.

Concerning claim 33, with the fibers forming the material of the first elongated tube 14 of geotextile material, refer to page 3, lines 10-25 and page 32, lines 18-21 for example.

Concerning claims 35, wherein water is capable of moving into or out of the ballast tubes with semi-permeable ballast tubes for example, with the outer container being partially permeable but having an impermeable liner, refer to page 33, lines 1-16.

As to claims 37-41, 53-61, and 63-71, and the various ribs 18, hoops 22, belts 23, and straps forming reinforcing regions along the container, refer to page 16, line 17 through page 18, line 21 of the application.

Concerning claim 72, with its ports 41, 42 defined along the length of the container, refer to Figs. 12A, 12C, 12E, 12G, 12I, 13A, and 13B of the application.

Concerning claims 2, 3, 35, 49 and 50, with an inner liner for the container, refer to Figs. 8A and 9 and page 14, line 1 through page 15, line 11.

Concerning claims 42, 43, 52-67, 69-71, 76 and 77, with reinforced regions 24 along the length of the elongated container, refer to Figs. 4A, 4B, 5B, 5C, 5D, 8A, 9, 10 and 11, as well as the description beginning at line 24 of page 17 through line 17 of page 18.

6. ISSUES FOR REVIEW:

As to the rejections of each of claims 1-6, 8, 11, 13-21, an issue for review is whether the rejections ignore the requirement of each of claims 1, 6 and 16 for fill material solids to be held inside the ballast tubes.

As to the rejections of each of the claims on appeal, an issue for review is whether the rejections inaccurately portray the teaching of Doolage.

As to the rejections of each of the claims on appeal, an issue for review is whether the rejections make selective use of the teaching of Doolage.

As to the rejections of claims 1-6, 8, 11, 13-24, and 26-30, an issue for review is whether the rejections make selective use of the teaching of Holmberg.

As to the rejections of claims 1-6, 8, 11, 13-24, and 26-30, an issue for review is whether the rejections inaccurately portray the teaching of Holmberg.

As to the rejections of each of claims 1-6, 8, 11, 13-24, and 26-30, an issue for review is whether the rejections fail to point to any factually accurate reason that instructs the person of ordinary skill to interpret the teaching of the Doolage reference in just the fashion needed to provide the elements that the rejections acknowledge to be missing from the Holmberg reference.

As to the rejection of claim 11, an issue for review is whether the asserted motivation for combining Holmberg and Doolage, is itself factually incorrect.

Whether claims 22-24 are patentable under 35 U.S.C. § 103(a) over Doolage in view of Holmberg.

Whether claims 2 and 3 are patentable under 35 U.S.C. § 103(a) over Holmberg in view of Doolage as applied to claim 1, and further in view of Bradley.

Whether claims 17 and 18 are patentable under 35 U.S.C. § 103(a) over Holmberg in view of Dooleage as applied to claim 16, and further in view of Bradley.

As to the rejection of claim 25, an issue for review is whether the asserted motivation for combining Dooleage and Paoluccio, is itself factually incorrect.

Whether claims 25, 31, 33, and 34 are patentable under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of Paoluccio.

Whether claims 26-30 are patentable under 35 U.S.C. § 103(a) over Dooleage in view of Paoluccio as applied to claim 25, and further in view of Holmberg.

Whether claim 32 is patentable under 35 U.S.C. § 103(a) over Dooleage in view of Paoluccio as applied to claim 31, and further in view of Cizek et al..

As to the rejections of claims 35, 37-43, 45 and 49-75, an issue for review is whether the rejections inaccurately portray the teaching of Bradley.

As to the rejections of claims 45 and 49-75, an issue for review is whether the asserted motivation for combining Dooleage and Bradley, is itself factually incorrect.

Whether claims 35, 37-43, 45 and 49-75 are patentable under 35 U.S.C. § 103(a) over Dooleage in view of Bradley.

Whether Dooleage and Bradley are so fundamentally incompatible as to render their combination in the manner required by claim 62, and claims dependent thereon, implausible to the skilled artisan.

As to the rejections of claims 61 and 71, an issue for review is whether the asserted motivation for combining Dooleage and Bradley, is itself factually incorrect.

Whether claims 46-48 are patentable under 35 U.S.C. § 103(a) over Dooleage in view of Bradley as applied to claim 45, and further in view of Honjo et al.

Whether Dooleage and Labora are so incompatible as to render their combination in the manner required by claims 42 and 43, implausible to the skilled artisan.

Whether claims 42 and 43 are patentable under 35 U.S.C. § 103(a) over Dooleage in view of Labora.

Whether claims 76 and 77 are patentable under 35 U.S.C. § 103(a) over Bradley in view of Dooleage.

7. GROUPING OF CLAIMS

Claim 11 does not stand or fall with claims 1, 4-6, 8, 13-16 and 19-21.

Claim 26 does not stand or fall with claims 27-30.

Claims 27-30 do not stand or fall with claim 26.

Claims 49-51 do not stand or fall with claims 45 and 52-72.

Claim 51 does not stand or fall with claims 45, 49, 50 and 52-72.

Claims 61 and 71 do not stand or fall with claims 45, 49-60 and 63-70 and 72.

Claim 62 does not stand or fall with claims 45, 49-61 and 63-72.

8. ARGUMENTS:

Applicant is in his mid-60's now, and has been in this business for many years. He has often been reminded that Applicant's business is very much a struggle against the unpredictability and power of Mother Nature, which constantly acts to reclaim the land that Applicant's barriers and methods try to preserve. Applicant's business is

located in Florida where another hurricane season has passed, and the consequences of losing this struggle are still fresh in the memory.

The size and scope of these types of structures that are called upon to resist these powerful forces of wind and wave action are massive. The drawings in some of the references attempt to convey the relative sizes of these kinds of structures. But even these drawings are incapable of providing the impact of actually seeing these structures being built and put into place as Applicant has done for many years. In an attempt to provide the Office with an appreciation of the experience of an encounter with some of these structures, Applicant provided in his Amendment After Final Rejection, a copy (attached at the end of this brief before the Appendix of Claims) of one of his company's brochures (published in December, 1997) containing photos that give some idea about the size of the outermost envelope of these structures in relation to a man standing inside one of the containers (lower right corner) and in relation to a man standing on top of a container disposed next to dredging machines (lower left corner).

The final rejections are characterized by the selective application of various structural elements in the references in order to make up the full complement of elements required by the claims. This is improper, and the rejections should be reversed. In re Fine, 5 USPQ 2d 1596, 1600 (Fed. Cir. 2000) ("One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.").

The motivation supplied by the Final Action for selecting particular elements from a reference versus selecting other potential elements in a reference, ignores the fact

that the magnitudes of the forces involved in these types of structures and the disastrous, if not catastrophic, results upon their failure once they are put into place for their intended uses, tends to make persons of ordinary skill far more hesitant to extract particular structural elements from one environment or type of structure and apply them to another, than is reflected in the final rejections. Yet, the final rejections repeatedly resort to this type of selective process when combining different elements from different references in precisely the manner that is described in Applicant's claims. Applicant respectfully submits that in doing so, the final rejections ignore the caution that persons of ordinary skill in this art must apply when constructing these types of structures. Moreover, in a number of instances the motivations upon which the selections purport to rely, are factually inaccurate. With this generally applicable overview in mind, Applicant turns to address the specific references and final rejections.

A. Every Rejection Is Flawed for Its Inaccurate Portrayal of Dooleage

Each of the claims on appeal has been rejected based on Dooleage.

On page 3 in paragraph 2 of the Final Action, the rejection states that:

Dooleage teaches a system for forming a barrier or dam comprising: A 1st tubular shaped container (13), having a plurality of 1st ballast tubes (11, 12) contained within an interior space of said 1st tubular shaped container.

This is an inaccurate portrayal of the teaching of Dooleage. For this portrayal over-generalizes the teaching of Dooleage.

Nowhere in Dooleage is it suggested that the ballast tubes should contain fill solids (or any other material for that matter) rather than water.

A fair reading of Dooleage would limit its teaching to the inclusion of two water-filled ballast tubes disposed within an outer tubular shaped container that is devoid of anything save the two water-filled ballast tubes. Both of Dooleage's objects of the invention specify "water filled." Dooleage in fact specifies that while the outer tubular container 13 could be a net, which is very permeable, Dooleage specifies that the ballast tubes must be impermeable. If Dooleage contemplated solid fill material for the ballast tubes, then there would be no need for Dooleage to require impermeable ballast tubes. It is only the hindsight perspective afforded by the Applicant's disclosure that causes the Final Rejection to adopt the broad generalization of Dooleage's teaching that ignores the limitations of Dooleage's teaching. Accordingly, all of the rejections fail to take account of the Dooleage reference as a whole and thus present a factually inaccurate portrayal of Dooleage. For this reason alone, the rejections of all of the claims should be reversed.

B. Claims 1, 4, 5, 6, 8, 11, 13-16 and 19-21 Are Patentable under 35 U.S.C. § 103(a) over Holmberg in View of Dooleage

Claims 1, 4, 5, 6, 8, 11, 13-16 and 19-21 were finally rejected under 35 U.S.C. § 103(a) over Holmberg in view of Dooleage.

Each of claims 1, 6 and 16 requires an elongated tubular-shaped container having an inside space that contains at least two ballast tubes, which themselves are filled with fill material solids.

The unfairly broad reading of Dooleage noted above fatally infects this rejection. Moreover, even reading the teaching of Dooleage to suggest putting two water-filled

ballast tubes within the Holmberg system is a stretch. Why would the person of ordinary skill put two water-filled ballast tubes inside Holmberg's tube, which already is filled with solid material?

How much more improbable is it to go another step farther in order to read Dooleage as suggesting that the person of ordinary skill should put two solid-filled ballast tubes within the Holmberg system, which of course is already filled with solid material? Only a selective reading of both Dooleage and Holmberg with the aid of a hindsight peek at Applicant's disclosure could instruct the person of ordinary skill to remove solid fill material from the Holmberg container, remove the water from the Dooleage ballast tubes, put the Dooleage ballast tubes inside the space evacuated from the Holmberg container by the removal of the solid fill material therefrom, and then put the removed solid fill material into the Dooleage ballast tubes. It is this completely improbable suggestion that is required in order to render claims 1, 4, 5, 6, 8, 11, 13-16 and 19-21 unpatentable over Holmberg in view of Dooleage. And there is no way to derive this suggestion from Dooleage and Holmberg without inaccurately portraying the teaching of Dooleage, making selective use of the teaching of Dooleage and applying a hindsight peek at Applicant's disclosure.

The only motivation for this improbable combination is provided on page 4 of the Final Rejection. The stated motivation is: "to increase the mass and wave dissipation strength of the barrier or dam so formed." However, the asserted combination fails to achieve this goal. Holmberg already is filled with solid material, and thus putting that solid material into ballast tubes does nothing to increase the mass. If anything, the volume occupied by the envelope of the ballast tubes, which is less dense than the

solid fill material, will reduce the mass by displacing volume that previously was occupied by solid fill materials. Moreover, the wave dissipation aspect of the Doolage structure was dependent upon having water-filled ballast tubes, not solid-filled ballast tubes as required by the rejected claims. Thus, the asserted motivation turns out to be factually inaccurate and thus fails to provide any motivation at all.

Applicant therefore respectfully submits that claims 1, 4, 5, 6, 8, 11, 13-16 and 19-21 are patentable under 35 U.S.C. § 103(a) over Holmberg in view of Doolage for this first reason alone.

Claim 11 depends on claim 6, which requires a first cradle tube positioned against the tubular-shaped container. Claim 11 specifies that filler tubes are located within the cradle tube.

While Holmberg discloses a cradle tube 26, Holmberg does not disclose ballast tubes. Nor does Holmberg suggest introducing any ballast tubes into this cradle tube. Doolage does not recognize the existence of cradle tubes. Nor does Doolage suggest using ballast tubes in cradle tubes.

Nonetheless, the final rejection states at page 5 thereof that it would be obvious to provide cradle tubes having at least one ballast/filler tube as taught by Doolage in order to increase the mass and anchor strength of the cradle tube. This statement is factually inaccurate and does not make sense. The Holmberg cradle tube is already filled with solid material. Substituting ballast tubes filled with solid material for the solid material already within the cradle tube of Holmberg does not increase the mass of the cradle tube. If anything, it might decrease the mass, because the volume occupied by the envelopes forming the cradle tubes is less dense than the mass of the solid fill

materials that it would displace from the original Holmberg cradle tubes. Thus, the rejection lacks any reasonable basis for combining the teachings of the references as asserted by the rejection, except of course the hindsight provided by applicant's disclosure. This provides yet another reason why claim 11 is not rendered obvious by the combination of Holmberg and Doolage. Accordingly, claim 11 is patentable under 35 U.S.C. § 103(a) over Holmberg in view of Doolage for this additional reason.

C. Claims 2 and 3 Are Patentable Under Section 103(a) Over Holmberg in View of Doolage

Claims 2 and 3 were finally rejected under 35 U.S.C. 103(a) as unpatentable over Holmberg in view of Doolage as applied to claim 1 and further in view of Bradley. Because of the deficiencies noted above in the asserted combination of Holmberg and Doolage as applied to claim 1, and the failure of Bradley to correct these deficiencies, claims 2 and 3 are patentable over the combined references asserted in the final rejection.

D. Claims 17 and 18 Are Patentable Under Section 103(a) Over Holmberg in View of Doolage

Claims 17 and 18 were finally rejected under 35 U.S.C. 103(a) as unpatentable over Holmberg in view of Doolage as applied to claim 16 and further in view of Bradley. Because of the deficiencies noted above in the asserted combination of Holmberg and Doolage, and the failure of Bradley to correct these deficiencies,

claims 17 and 18 are patentable over the combined references asserted in the final rejection.

E. Claims 22-24 Are Patentable under 35 U.S.C. § 103(a) over Dooleage in View of Holmberg

The rejection of claims 22-24 is based on the contention stated on page 19 of the Final Action that:

It would have been obvious to one of ordinary skill in the art, at the time the invention was made, to provide the method of forming a barrier of Dooleage, with the method step of pumping a water/solids slurry into the elongated containers and tubes, as taught by Holmberg, in order to increase the mass and wave dissipation strength of the barrier.

Because this contention is rife with contradictions, the contention is false, and the rejection cannot stand.

The present application was filed in July of 2000. The Holmberg disclosure was first made public in December, 1989. The Dooleage disclosure was first made public in June, 1992. The rejection does not rely on any teaching that became public after the Dooleage issue date. Thus, if the base contention of the rejection is true, then the invention of claims 22-24 was obvious as of the June 1992 issue date of Dooleage. Moreover, according to the rejection's base contention, persons of ordinary skill in the art were motivated since then to employ "the method step of pumping a water/solids slurry into the elongated containers and tubes, as taught by Holmberg, in order to increase the mass and wave dissipation strength of the barrier." Why then is there no such teaching for more than 8 years until the present application is filed in July 2000? During these eight (8) years, there has been no diminishment of flooding or beach

erosion in the world. It is because the base contention of the rejection is so counterintuitive that it has not come to fruition for more than eight (8) years. Accordingly, the base contention of the rejection cannot stand the test of fulfilling the requirement for substantial evidence in support of a finding of obviousness.

The rejection refers to col. 7, lines 15-50 of Holmberg as teaching the pumping of fill material solids into the container and tubes. However, lines 46-47 of col. 7 of Holmberg state that "water filters out of the tubular enclosure because the tubular enclosure is made of permeable fabric, . . ." As noted above, Doolage requires "two impermeable bags" for its ballast tubes. Thus, the disclosures of the two references are contradictory on their faces, with no suggestion on how to reconcile them other than the hindsight provided by the Applicant's disclosure. The selective use of elements from Holmberg under the guidance of Applicant's disclosure is an improper basis for finding of obviousness.

The two disclosures are contradictory on another major point. As the first two lines of the first object of the Doolage patent makes clear at col. 1, lines, 52-53, Doolage employs water-filled ballast tubes in order "to provide a water filled, flexible barricade . . ." The Holmberg device is rigid as cement, which is not in any sense "flexible." This rigid aspect of the Holmberg container is apparent from the very same passage cited by the rejection. There it is clearly stated that the Holmberg container and tubes are filled with cement, while any water leaves. Thus, to pump water/solids slurry into the Doolage ballast tubes would contradict the teaching of Doolage "to provide a water filled, flexible barricade."

Moreover, the base contention of the rejection misstates the teaching of Holmberg. Holmberg does not teach pumping a water/solids slurry into impermeable tubes such as are required by Dooleage. Holmberg only teaches pumping a water/solids slurry into tubes or containers that are water permeable so that the water can filter through the tubes and leave only the rigid cement inside the containers or tubes. The final rejection rests on this additional factually inaccurate portrayal of Holmberg, and thus cannot stand.

Applicant therefore respectfully submits that claims 22-24 are patentable under 35 U.S.C. § 103(a) over Dooleage in view of Holmberg.

D. Claim 25 Is Patentable under 35 U.S.C. § 103(a) over Dooleage in View of Paoluccio

Claim 25 was rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of Paoluccio. Claim 25 specifies an elongated container that contains a plurality of independent ballast tubes, which contain solids as fill material. Dooleage lacks any teaching of solids within its ballast tubes 11, 12. Though Paoluccio discloses a dike 10 that contains solids as fill material, Paoluccio does not comprehend any ballast tubes. Paoluccio only teaches that the water is always removed from the solids used to form a dike, if not by a drain 20, then by fluid pervious portions of the envelope 11 that is left drained of water to become the solids-filled dike 10. Thus, Dooleage's lack of any teaching of solids within its ballast tubes 11, 12 is not corrected by Paoluccio, which fails to disclose or suggest ballast tubes at all, much less putting solids into impermeable ballast tubes that retain liquid as in the Dooleage ballast tubes. Paoluccio

thus fails to correct the deficiency in Dooleage regarding claim 25. Therefore, claim 25 is patentable under 35 U.S.C. § 103(a) over Dooleage in view of Paoluccio for this initial reason.

As motivation for selecting from Paoluccio the provision of solid fill material into the ballast tubes of Dooleage, the Final Rejection on page 7 asserts that it is "to increase the dead weight of the barrier." However, such a motivation directly contradicts the fundamental purpose of Dooleage's use of water-filled ballast tubes. That purpose is to absorb wave energy by the displacement of the liquid inside the ballast tubes upon impact by the waves. Substituting solid fill material into a ballast tube will not accomplish this purpose. Accordingly, the motivation asserted by the Final Rejection is factually inaccurate, as it does not exist. One is tempted to say that it does not hold water. Since the asserted motivation is factually inaccurate, the rejection should be reversed.

Moreover, claim 25 includes the further requirement that at least one ballast tube contains solid fill material in a lower portion of the ballast tube and a liquid in the upper portion of the ballast tube. Dooleage, as described, teaches the use of water filled bags 11, 12 inside a surrounding bag 13, and does not suggest or describe in any manner the use of solids within such bags. The deficiency of Dooleage in failing to teach the use of solids within ballast tubes is not provided in the teachings of the Paoluccio reference. Only during the construction of the Paoluccio structure is a mixture of water and soil present in the envelope-shaped structure 11. As explained at column 3, lines 45-50 of Paoluccio, the water constantly drains away to leave a sediment-filled dike 10 once the Paoluccio structure is completed. Paoluccio fails to teach any ballast tubes.

Paoluccio fails even to teach a completed barrier that has solids and water. The water always drains out, either through a drain 20 or through the fluid pervious portions of the envelope 11. See column 3, lines 52-55 of Paoluccio. Only with the aid of the hindsight provided by applicant's disclosure can the skilled artisan derive from Paoluccio the idea of supplying solid fill material to the impermeable ballast tubes of Dooleage. Only if one disregards the teaching of Paoluccio and relies purely on the hindsight provided by applicant's disclosure can the skilled artisan derive leaving one impermeable ballast tube of Dooleage with solid fill in the lower portion and water in the upper portion. Accordingly, applicant respectfully submits that absent the hindsight provided by applicant's disclosure, Dooleage and Paoluccio fail to render the subject matter of claim 25 obvious to the person of ordinary skill for this additional reason.

Applicant respectfully submits that claim 25 is patentable under 35 U.S.C. § 103(a) over Dooleage in view of Paoluccio.

E. Claims 26-30 Are Patentable under 35 U.S.C. § 103(a) over Dooleage in View of Paoluccio and further in View of Holmberg

Claims 26-30 were rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of Paoluccio as applied to claim 25, and further in view of Holmberg.

Holmberg teaches anchoring a mat 20 with anchoring pockets 22 and stabilizing the mat 20 by placing on top of mat 20 a larger-diameter, elongated stabilizer tube 24 filled with solids that is surrounded on each side by a smaller diameter, elongated control pocket 26, which is also filled with solids. Dooleage does not contemplate any such mat. Nor does Dooleage contemplate any such control pocket. Holmberg does

not contemplate the use of ballast tubes in any respect, much less within a tubular container.

Each of claims 26-30 depends from claim 25 (i.e. elongated container, independent ballast tubes that contain solid fill material in the lower portion and liquid in the upper portion). As Holmberg fails to include ballast tubes and fails to include ballast tubes partially filled with solids and partially with liquid, Holmberg fails to correct the deficiencies noted above in Dooleage and Paoluccio as applied to claim 25. Applicant therefore respectfully submits that Dooleage, Paoluccio and Holmberg fail to render the subject matter of claims 26-30 obvious to the person of ordinary skill for this first reason.

Moreover, claim 26 adds to the requirements of claim 25, the further requirement of a first cradle tube positioned adjacent to the container. Neither Dooleage nor Paoluccio discloses the use of cradle tubes positioned adjacent a first continuous tubular shaped container. While Holmberg discloses the use of a control pocket 26 adjacent a tubular shaped stabilizer 24 wherein both the tubular shaped stabilizer 24 and the control pocket 26 are disposed atop an underlying mat 20 formed of water permeable geotextile material, such a disclosure fails to suggest to the skilled artisan to use a cradle tube adjacent a tubular shaped container that is not already disposed atop an underlying mat structure that is anchored by anchoring pockets 22.

Nor is there is any motivation to combine the control pocket 26 of Holmberg with the container of ballast tubes shown in Dooleage. Dooleage at column 3, lines 10-17, already teaches stabilization of the water filled bags using doughnut-shaped water filled bags 19 as anchors, not a control pocket as in Holmberg. There is no need or

advantage to the control pocket as in Holmberg. Moreover, these donut-shaped bags 19 in Dooleage are disposed inside the surrounding cover 13, not alongside it as are the Holmberg control pockets. Only the hindsight provided by applicant's disclosure teaches the use of the cradle tube adjacent the tubular shaped container without the underlying mat structure that is anchored by anchoring pockets 22.

Each of claims 27-30 adds to the requirements of claim 25, the further requirement of a scour apron. Absent the hindsight of applicant's disclosure, there would be no suggestion how to combine the elongated water filled bags of Dooleage with the solid filled "dike" of Paoluccio, and a mat 20 of Holmberg, to somehow reconstruct the invention defined in claims 27-30. Paoluccio teaches a dike to hold back floodwaters, and therefore stabilization in a high-energy wave environment is not a significant issue. Holmberg, on the other hand, teaches an erosion control foundation mat 20, but only with smaller diameter, solid-filled tubes 26 on opposite sides of a larger diameter, solid-filled tube 24, but without any ballast tubes within either of the solid-filled tubes 24, 26. Without hindsight instruction provided by applicant's disclosure, the person of ordinary skill would not combine these separate structures in the manner asserted by the rejection. Applicant therefore respectfully submits that each of claims 27-30 is patentable under 35 U.S.C. § 103(a) over Dooleage in view of Paoluccio and further in view of Holmberg for this additional reason.

F. Claims 31, 33 and 34 Are Patentable under 35 U.S.C. § 103(a) over

Dooleage in View of Paoluccio

Claims 31, 33, and 34 were rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of Paoluccio. Claims 33 and 34 depend from claim 31. Claim 31 describes a first elongated tube having a plurality of ballast tubes within the first elongated tube. The ballast tubes are generally semi-permeable. Furthermore, fill material solids are held in position within at least one of the ballast tubes.

Dooleage uses water-filled ballast tubes that are impermeable. Furthermore, there is no teaching in Dooleage of using semi-permeable ballast tubes. See Dooleage, column 1, line 67. There is no teaching in Dooleage of using any ballast tubes with solid fill materials. Paoluccio teaches an envelope 11 that provides a water-permeable, sand filled "dike" to provide a stable barrier for rising floodwaters. There is no teaching in Paoluccio of using ballast tubes of any sort inside envelope 11, much less semi-permeable ballast tubes. Neither Dooleage nor Paoluccio teaches solid-filled ballast tubes. Nor is there any teaching or motivation for replacing the water within any of Dooleage's impermeable ballast tubes, 11, 12, with solid materials that are inside Paoluccio's dike 10. In fact, it is contra-indicated to suggest same. Because the bags 11, 12 of Dooleage are water-filled, such structures could not properly function if they were semi-permeable, as they would leak as taught by Paoluccio. Absent the hindsight provided by applicant's disclosure, the person of ordinary skill has no suggestion to replace the impermeable water-filled ballast tubes of Dooleage with at least one semi-permeable ballast tube filled with solids based on Paoluccio's disclosure of a dike formed of an envelope 11 that is filled with solids and has faces 11A, 11B that are fluid

pervious. Thus, there is no teaching of using semi-permeable ballast tubes in either of the cited references, and in fact Doolage teaches away from such structures.

On page 8, the final rejection asserts that the motivation was "to provide the barrier of Doolage with inlet and outlet ports, as taught by Paoluccio, in order to fill the apparatus at a very rapid rate." Contrary to this assertion of the Final Action, inlet and outlet ports do not render ballast tubes semi-permeable to a person of ordinary skill. Paoluccio for example relies on fluid pervious faces 11A and 11B, not inlet and outlet ports, to render envelope 11 semi-permeable. Thus, inlet and outlet ports in the outer container of Doolage do not render the ballast tubes inside the Doolage container, semi-permeable. Accordingly, applicant respectfully submits that claims 31, 33 and 34 are patentable under 35 U.S.C. § 103(a) over Doolage in view of Paoluccio.

G. Claim 32 Is Patentable under 35 U.S.C. § 103(a) over Doolage in View of Paoluccio and further in View of Cizek et al.

Claim 32 was rejected under 35 U.S.C. § 103(a) as unpatentable over Doolage in view of Paoluccio as applied to claim 31, and further in view of Cizek et al. Claim 32 depends from claim 31 and thus is patentable under 35 U.S.C. § 103(a) over Doolage in view of Paoluccio for the same reasons as claim 31. Moreover, Cizek et al fails to correct the deficiencies noted above in the combination of Doolage and Paoluccio as applied to claim 31, and therefore claim 32 is patentable under 35 U.S.C. § 103(a) over Doolage in view of Paoluccio and Cizek et al for the same reason that claim 31 is patentable over this combination of references.

H. Claims 35 and 37-43 Are Patentable under 35 U.S.C. § 103(a) over Dooleage in View of Bradley

Claim 35 was rejected under 35 U.S.C. §103(a) as unpatentable over Dooleage in view of Bradley. Claim 35 requires a first elongated tube formed of partially permeable geotextile material and having a substantially waterproof inner liner and containing ballast tubes that are generally semi-permeable and at least one ballast tube holds solid fill material therewithin.

As stated previously, Dooleage does not teach ballast tubes that are semi-permeable, and to the contrary teaches against such semi-permeability for ballast tubes. Dooleage already has an outer container 13 for the ballast tubes that can be permeable, and so Dooleage has no need for Bradley to again suggest that the outer container be permeable or semi-permeable. However, where ballast tubes are concerned, Dooleage teaches only the use of impermeable bags that are filled with a liquid, namely, water, not solid fill. Bradley fails to teach any ballast tubes at all, much less semi-permeable ballast tubes and thus fails to cure the noted deficiency in the Dooleage disclosure. Because Dooleage teaches against semi-permeable ballast tubes, the combined disclosures of Dooleage and Bradley fail to suggest to the person of ordinary skill to employ semi-permeable material for ballast tubes. Applicant therefore respectfully submits that claim 35 is patentable under 35 U.S.C. § 103(a) over Dooleage in view of Bradley for this reason.

Moreover, the combined disclosures of Dooleage and Bradley are further deficient in failing to suggest the use of fill solids (as in Bradley) in place of the liquid water used to fill the ballast tubes of Dooleage. The Dooleage patent only teaches the

use of a liquid in its impermeable ballast tubes. Dooleag fails to suggest or contemplate the use of solids within ballast tubes. Bradley fails to correct this deficiency in Dooleage. Bradley does not suggest or disclose the use of ballast tubes within its container. Bradley merely teaches the use of solids in a container that lacks ballast tubes therein. Thus, Bradley does not suggest or contemplate the use of solids within ballast tubes. Absent this suggestion, Bradley fails to correct the noted deficiency regarding solid fill in Dooleage's ballast tubes. Absent the hindsight of applicant's disclosure, there is no suggestion to the person of ordinary skill to replace the water in Dooleage's impermeable ballast tubes with solid fill material as in Bradley's geotextile container, which is not a ballast tube, much less a plurality of independent ballast tubes. Thus, Dooleage and Bradley cannot render claim 35 obvious to the person of ordinary skill. Applicant therefore respectfully submits that claim 35 is patentable under 35 U.S.C. § 103(a) over Dooleage in view of Bradley for this additional reason.

Moreover, claim 35 requires an inner liner made of waterproof fabric. Since the Dooleage ballast tubes already are impermeable, why would the person of ordinary skill combine a liner as in Bradley with the Dooleage outer tube 13? Only hindsight provided by applicant's disclosure would move the skilled artisan to such a redundant combination. Accordingly, applicant respectfully submits that claim 35 is patentable under 35 U.S.C. §103(a) over Dooleage in view of Bradley for this additional reason.

Claim 42 was rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of Bradley. Claim 42 resembles claim 35 insofar as each requires a plurality of independent ballast tubes extending longitudinally within an elongated container,

wherein each of the ballast tubes has fill material solids on its respective inside spaces. The inability of Dooleage and Bradley to render claim 35 obvious to the person of ordinary skill regarding the use of fill material solids in the Dooleage ballast tubes thus applies equally to claim 42. Applicant therefore respectfully submits that claim 42 is patentable under 35 U.S.C. § 103(a) over Dooleage in view of Bradley for this same reason that is explained above for claim 35.

Each of claims 37-41 and 43 depends on claim 42, which is patentable under 35 U.S.C. §103(a) over Dooleage in view of Bradley for the reasons noted above. Thus, claims 37-41 and 43 are patentable under 35 U.S.C. §103(a) over Dooleage in view of Bradley for the same reasons that claim 42 is patentable over Dooleage in view of Bradley. Accordingly, applicant respectfully submits that claims 37-43 are patentable under 35 U.S.C. §103(a) over Dooleage in view of Bradley.

I. Claims 42 and 43 Are Patentable under 35 U.S.C. § 103(a) over Dooleage in View of Labora

Claims 42 and 43 were rejected under § 103(a) as unpatentable over Dooleage in view of Labora. Claim 42 is directed to a tubular apparatus comprising an elongated fabric container having two ends, and a plurality of independent ballast tubes within the container and solid fill material within the ballast tubes. Claim 42 also requires a plurality of longitudinally spaced reinforcing regions along the length of the elongated container.

Dooleage teaches a cover 13 that contains ballast tubes in the form of liquid-filled bags without solid fill. Labora teaches a flexible envelope 1 filled with a solid

material 2 such as sand and cement that is solidifiable after being injected under pressure. The Labora structure as shown in the drawings includes internal reinforcing members 4 that are fixed internally between opposing walls of the envelope 1. According to lines 86-89 of Labora, when not under load, these members 4 have a length that is less than the corresponding inside dimension of the expanded envelope 1.

Labora fails to suggest or disclose using a plurality of independent ballast tubes inside an elongated fabric container. Instead of ballast tubes, the teachings of Labora are directed to a lattice-type structure that resembles the use of rebar, cemented in place. Thus, the skilled artisan is likely to view the cemented lattice teachings of Labora as incompatible with the liquid-filled ballast tube teachings of Dooleage. Not even the final rejection suggests that Labora teaches replacing the water in Dooleage's ballast tubes with cement. Thus, the final rejection is deficient for failing to disclose ballast tubes with fill material solids as required by claims 42 and 43. There is no suggestion to pick and choose elements of Labora to be combined in a particular way with other chosen elements of Dooleage in order to arrive at the apparatus of claims 42 and 43. Only by the hindsight provided by applicant's disclosure can the skilled artisan derive from Labora the idea of supplying solid fill material to the ballast tubes of Dooleage.

Accordingly, applicant respectfully submits that absent the hindsight provided by applicant's disclosure, Dooleage and Labora fail to render the subject matter of claims 42 and 43 obvious to the person of ordinary skill.

Moreover, as to reinforcing regions required by claims 42 and 43, even though Fig. 2 of Labora shows belt-like structures 6, 7, 8 around the envelope 5, which

contains solid cement, there is no suggestion in either Dooleage or Labora to use such belts around an envelope that surrounds liquid-filled, impermeable ballast tubes. For the Dooleage structure is deformable due to the shifting of the water inside the ballast tubes in response to externally imposed dynamic forces. Labora by contrast, presents what is a strictly static situation due to the solidified cement. Accordingly, for this additional reason, applicant respectfully submits that claims 42 and 43 are patentable under 35 U.S.C. § 103(a) over Dooleage in view of Labora.

J. Claims 45 and 49-72 Are Patentable under 35 U.S.C. § 103(a) over Dooleage in View of Bradley

Claim 45 requires at least two semi-permeable ballast tubes containing water to be disposed within the interior of an elongated fabric container formed of impermeable material.

Acknowledging that Dooleage fails to disclose permeable ballast tubes, the final rejection states on page 13 thereof that:

Bradley teaches that barriers comprising elongate geotextile containers can be made from either permeable or impermeable materials depending on the application for which the container is inflated.

However, this teaching of Bradley fails to suggest to the person of ordinary skill the use of permeable materials for ballast tubes, which is what is required by claim 45. This deficiency is apparently recognized by implication from what is not said in the very next statement on page 13 of the final rejection. This statement is:

It would have been obvious to one of ordinary skill in the art, at the time the invention was mad , to make the apparatus of Dooleage, from both permeable and nonpermeabl geotextile fabrics, as taught by Bradley, in order to enable

the apparatus to self-inflate, by filtering silt from ambient water in which the apparatus is disposed.

This statement fails to make specific reference to the part of the "apparatus of Dooleage" that must be formed of permeable material. That part is of course the ballast tubes, and the failure to specifically reference the ballast tubes implies a recognition that the Bradley teaching is deficient when it comes to using permeable material for ballast tubes. Bradley in fact makes no reference of the existence of ballast tubes at all, notwithstanding that the Dooleage patent preceded the Bradley patent by many years. Bradley's teaching of permeability goes to the outer container, which is to be filled with water and solids, and the water seeps out to leave only the solids. The rejection conveniently ignores the use of this teaching as applied to the outer Dooleage container 13, which would allow all of the water to seep out of both the ballast tubes and the outer container 13 as well.

Moreover, the motivation that is asserted by the final rejection cannot stand up under even the briefest scrutiny. As noted above, the motivation was supposedly "to enable the apparatus to self-inflate, by filtering silt from ambient water in which the apparatus is disposed." However, no such filtering by the ballast tubes can occur. This is because claim 45 requires the ballast tubes to be enclosed within an impermeable container. It is this impermeable container that sits in the "ambient water in which the apparatus is disposed." The ballast tubes therefore cannot filter silt from the ambient water. Thus, the ballast tubes with their permeable walls are never exposed to the "ambient water in which the apparatus is disposed." It is therefore impossible that any such motivation could have influenced the person of ordinary skill to make the

combination asserted by the final rejection. Accordingly, the final rejection is deficient in this second regard.

In summary, the final rejection fails to teach the permeable ballast tubes.

Additionally, the final rejection fails to supply the required motivation to make the combination of Dooleage and Bradley asserted by the final rejection. Applicant therefore respectfully submits that claim 45 and each claim dependent thereon, including claims 49-72, are patentable under 35 U.S.C. § 103(a) over Dooleage in view of Bradley.

As to claims 49-51, the final rejection that is stated on page 13 thereof again relies upon the faulty premise that any motivation would be provided by the ability of the apparatus to filter silt from the ambient water in which it is disposed. Accordingly, the final rejection of claims 49-51 is similarly deficient for the reasons noted above regarding this factually incorrect motivation.

Additionally, claim 51 requires the disposition of solid fill materials in the interior of the container. The final rejection is deficient in providing any motivation for introducing solid fill material into the container of Dooleage, which already contains water-filled ballast tubes. Only applicant's disclosure provides the suggestion to the person of ordinary skill to do so. Accordingly, claim 51 is patentable under 35 U.S.C. § 103 over Dooleage in view of Bradley for this additional reason.

As to each of claims 61 and 71, the final rejection admits that the references themselves fail to disclose disposing reinforced regions inside of the container. As motivation for doing so, the rejection states on page 14 that it is:

an obvious manner in which to protect the reinforced region from direct loading by tidal forces, and an obvious way to protect the reinforced regions from corrosive environments, such as salt water.

Because these motivations are factually inaccurate, the rejection of claims 61 and 71 is additionally deficient and should be reversed for this additional reason.

The rejection fails to explain why placing the reinforced regions inside the container provides any advantage in terms of protection from direct loading by tidal forces. Whether inside or outside, the forces produced by the tides on the reinforced regions would appear to be the same. Additionally, since the water that is introduced to fill the ballast tubes is likely to be salt water, if the container is disposed in a salt water environment, placing the reinforced regions inside the container will not shield them from the corrosive effects of salt water. This is because the ballast tubes are configured of permeable material, which means that the salt water will leak out of the ballast tubes and directly soak any reinforced regions that are disposed inside the container. Accordingly, claims 61 and 71 are patentable under 35 U.S.C. § 103 over Dooleage in view of Bradley for this additional reason.

Claim 62 requires a plurality of ballast tubes within an elongated fabric container. Claim 62 also requires a plurality of transverse reinforced regions along the length of the container to provide structural support to the container. According to page 15 of the final rejection, it would be obvious to provide Dooleage's container with transverse reinforcing regions such as taught by Bradley in order to increase the wave dissipation strength of the Dooleage container. The problem here of course is that Dooleage was patented in 1992, and the application for the Bradley patent was filed in 1997, a span of five years. Yet, Bradley never hints at the applicability of the reinforcing regions to a

tube designed to contain water-filled ballast tubes, such as the by then well-known Dooleage structure.

Wave dissipation occurs because the water-filled ballast tubes absorb wave energy when the water in the ballast tubes shifts position in reaction to the striking wave. In Bradley by contrast, the fill materials are solids that behave differently insofar as their ability to absorb wave energy and dissipate the energy, because the fill material is not a liquid. Thus, the reinforcing regions in the Bradley disclosure have far less need to be flexible to accommodate the movement of the liquid that is within the water-filled ballast tubes of Dooleage. Accordingly, the person of ordinary skill would not regard the type of reinforcing regions disclosed in Bradley to have a similar applicability in the environment of the water-filled ballast tubes of Dooleage. For the final rejection to suggest the contrary, oversimplifies how the person of ordinary skill would view these two very different disclosures, Bradley and Dooleage, based on the very different flow characteristics of the material held inside the respective containers, solid fill versus liquid fill. The final rejection is deficient in failing to address these concerns of the person of ordinary skill. This failure leaves the final rejection of claim 62, and all claims dependent thereon, wanting, and requires reversal. Accordingly, claims 62-72 are patentable under 35 U.S.C. § 103 over Dooleage in view of Bradley for this additional reason.

K. Claims 46-48 Are Patentable under 35 U.S.C. § 103(a) over Dooleage in View of Bradley and further in View of Honjo et al.

Claims 46-48 were rejected under 35 U.S.C. § 103(a) as unpatentable over Dooleage in view of Bradley as applied to claim 45, and further in view of Honjo et al. Claims 46-48 depend on claim 45. While arguably the Honjo et al disclosure relates to surface coating material to render the material impermeable, the Honjo et al reference fails to correct the other deficiencies noted above in the Dooleage and Bradley combination as applied to claim 45. Accordingly, claims 46-48 are patentable under 35 U.S.C. § 103(a) over Dooleage in view of Bradley as applied to claim 45, and further in view of Honjo et al for the same reasons that claim 45 is patentable over Dooleage in view of Bradley.

L. Claims 77 and 78 Are Patentable under 35 U.S.C. § 103(a) over Bradley in View of Dooleage

Claims 76 and 77 were rejected under 35 U.S.C. § 103(a) as unpatentable over Bradley in view of Dooleage. Claim 76 requires at least one ballast tube to be disposed on the inner surface of a container that is formed by longitudinal seaming and at least two cylindrical tubular sections that join together to form a transversely oriented reinforced region along a length of the geotube. See application page 25, lines 17-24.

The asserted combination of Bradley in view of Dooleage is no more obvious to the person of ordinary skill as the combination of Dooleage in view of Bradley asserted against claim 45. Moreover, the deficiencies of the Dooleage/Bradley combination apply equally well to the Bradley/Dooleage combination for the reasons described

above in connection with claim 45. These same reasons warrant the reversal of the rejection of claims 76, and 77 dependent thereon, under 35 U.S.C. §103(a) over Bradley in view of Dooleage.

M. Conclusion

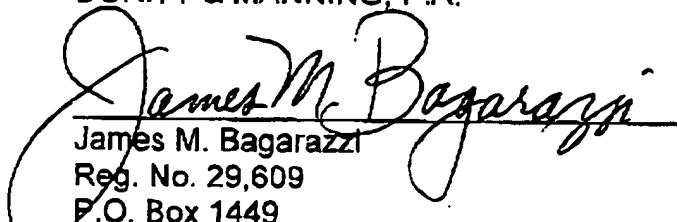
As explained more fully above, the final rejections are deficient in their reliance upon flawed motivations for combining selected teachings from one reference with selected teachings from another reference. In some cases, these selections ignore contradictory teachings in the references. In other cases, these motivations are flawed in their false factual assumptions. In yet other cases, these motivations are flawed because they are self-contradictory. Because of all of these deficiencies, the rejections are reduced to becoming little more than mere listings of the elements in the rejected claims. Additionally, the final rejections are deficient in their interpretation of the teaching of certain of the references. In view of all of the foregoing deficiencies, these rejections are in error as a matter of law and should be reversed.

Applicant therefore respectfully submits that the final rejections of claims 1-6, 8, 11, 13-35, 37-43, 45-72, 76 and 77, should be reversed, and these claims should be held allowable and passed to issue.

Respectfully submitted,

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DATED: 11-20-02


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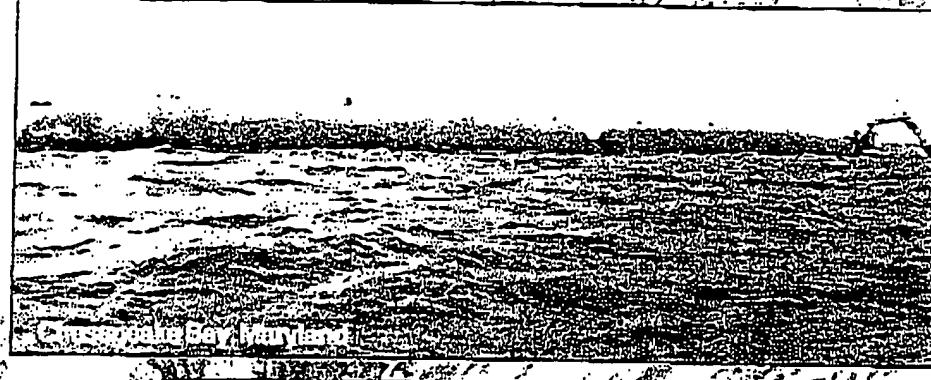
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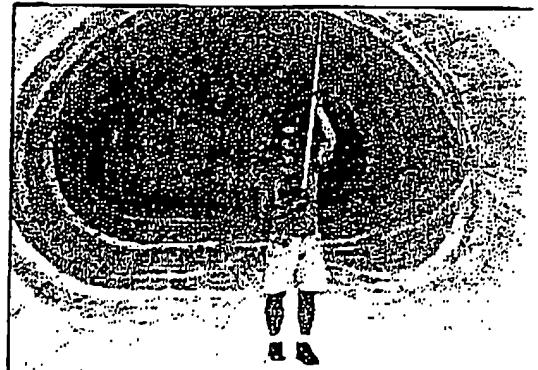
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APPENDIX**9. CLAIMS (AS AMENDED) INVOLVED IN APPEAL:**

1. A system for maintaining fill material solids in position to form a barrier or dam, the system comprising:

(a) a first elongated sheet of geotextile material;

(b) a means for seaming the first elongated sheet into a first continuous tubular-shaped container having an inside space;

(c) at least two ballast tubes disposed within said inside space of the container; and

(d) fill material solids held inside the ballast tubes;

(e) wherein the fill material solids are held in position by the ballast tubes and the first tubular-shaped container to form a barrier or dam.

2. The system of claim 1 wherein the first tubular-shaped container additionally comprises a second elongated sheet.

3. The system of claim 2 wherein the second elongated sheet is coiled into a second tubular-shaped container within the inside space of the first tubular-shaped container, thereby forming a tubular container having an inner liner.

4. The system of claim 1 in which the first continuous tubular-shaped container is formed by stitching, gluing or heat bonding a geotextile material into a tubular shape.

5. The system as set forth in claim 1 whereby said tubular-shaped container comprises opposed ends that are closed to form a barrier or dam.

6. A system for maintaining fill material solids in position to form a barrier or dam, the system comprising:

- (a) a first elongated sheet of geotextile material;
- (b) a means for seaming the first elongated sheet into a first continuous tubular-shaped container having an inside space;
- (c) at least two ballast tubes disposed within said inside space of the container;
- (d) fill material solids held inside the ballast tubes; and
- (e) a first cradle tube positioned adjacent to the first continuous tubular-shaped container, the cradle tube being configured to maintain the first tubular-shaped container in a stable position to form a barrier or dam.

8. The system of claim 6 additionally comprising a second cradle tube.

11. The system of claim 6 in which filler tubes are located within a cradle tube.

13. The system of claim 6, further comprising a scour apron disposed beneath said container and said cradle tube.

14. The system of claim 13 in which the scour apron is comprised of one or more anchor tubes and a blanket.

15. The system of claim 13 wherein the scour apron is located beneath the first tubular-shaped container.

16. An apparatus for forming a barrier, comprising:

- (a) an elongated container; and
- (b) a plurality of independent ballast tubes within the container, the ballast tubes each having an inside and an outside space, the ballast tubes having fill material solids on their respective inside spaces, each ballast tube being enclosed such that there is no substantial communication or flow between independent ballast tubes, each ballast tube being configured to maintain an independent solid fill level and pressure.

17. The apparatus of claim 16, further wherein the elongated container is substantially impermeable.

18. The apparatus of claim 16, further wherein the elongated container is made impermeable by: (i) coating a geotextile fabric which is employed as an elongated container, or (ii) by employing an impermeable geotextile fabric as an elongated container.

19. The apparatus of claim 16 in which the elongated container is anchored in part by a scour apron having an anchor tube.

20. The apparatus of claim 19 in which the scour apron further comprises a blanket.

21. The apparatus of claim 19 wherein the scour apron supports the container on the underside of the container.

22. A method of forming a barrier or dam using solid materials, comprising:

(a) providing an elongated container; and

(b) providing a plurality of independent ballast tubes within the elongated container, each ballast tube being enclosed such that there is no substantial communication or flow between independent ballast tubes;

(c) pumping a water/solids slurry into at least one ballast tube; and

(d) pumping a water/solids slurry into the elongated container.

23. A method of forming a barrier or dam using solid materials, comprising:

(a) providing an elongated container; and

(b) providing a plurality of independent ballast tubes within the container, each ballast tube being enclosed such that there is no substantial communication or flow between independent ballast tubes; and

(c) pumping a water/solids slurry into the ballast tubes.

24. The method of claim 23 in which the pumping step (c) further comprises:

i) pumping water, followed by

ii) pumping a water/solids slurry into at least one ballast tube.

25. A structure that resists soil or sand erosion against high energy waves, comprising:

(a) an elongated container; and

(b) a plurality of independent ballast tubes within the container, the ballast tubes each having an inside and an outside space, the inside space having a lower portion and an upper portion, the ballast tubes being configured to receive fill material solids on their respective inside spaces;

(c) wherein at least one ballast tube contains solid fill material in a lower portion of the ballast tube and a liquid in the upper portion of the ballast tube, the upper portion of the ballast tube being capable of absorbing wave energy to maintain the structure in a stationary position.

26. The apparatus of claim 25 further comprising a first cradle tube positioned adjacent to the container.

27. The apparatus of claim 25, further comprising a scour apron.

28. The apparatus of claim 27 in which the scour apron further comprises an anchor tube.

29. The apparatus of claim 27 in which the scour apron further comprises a blanket.

30. The apparatus of claim 27 wherein the scour apron supports the container on the underside of the container.

31. A system for maintaining fill material solids in position to form a barrier or dam in a water environment, the system comprising:

(a) a first elongated tube having an interior and exterior, the tube being made of impermeable geotextile material; and

(b) a plurality of ballast tubes located within the first elongated tube, the ballast tubes being generally semi-permeable;

(c) wherein fill material solids are held in position within at least one of said ballast tubes, and water is capable of moving into or out of ballast tubes, the overall barrier or dam being essentially watertight on its exterior surface due to impermeability of the geotextile material, thus resulting in minimal net water flow to the exterior of the first elongated tube.

32. The system of claim 31 wherein the first elongated tube of geotextile material comprises a coating on the exterior surface of said material.

33. The system of claim 31 wherein the first elongated tube of geotextile material is comprised of base fibers selected from the group of fibers consisting of: polyester, polypropylene, and synthetic fibers.

34. The system of claim 33 wherein the coating is compatible with the base polymeric fibers, and is selected from the group of coatings consisting of: polyvinyl chloride, polyethylene, and polypropylene.

35. A system for maintaining fill material solids in position to form a barrier or dam in a water environment, the system comprising:

(a) a first elongated tube having an interior and exterior, the tube being made of partially permeable geotextile material having an inner liner of substantially waterproof fabric; and

(b) a plurality of ballast tubes located within the first elongated tube, the ballast tubes being generally semi-permeable;

(c) wherein fill material solids are held in position within at least one of the ballast tubes, and water is capable of moving into or out of the ballast tubes, the overall barrier or dam being essentially watertight on its exterior surface due to impermeability of the liner material, thus resulting in minimal net water flow to the exterior of the first elongated tube.

37. The container of claim 42 wherein the container is secured along its length by hoops.

38. The container of claim 37 wherein the hoops are comprised of a plurality of thicknesses of geotextile fabric.

39. The container of claim 42 in which a spiral belt is provided along the length of the container.

40. The container of claim 39 in which the belt provides enhanced resistance to elongation of the container under stress.

41. The container of claim 39 in which the belt is on the outside of the container.

42. A tubular apparatus for forming a barrier, comprising:

(a) an elongated fabric container having two ends;

(b) a plurality of independent ballast tubes extending longitudinally within the container, the ballast tubes each having an inside and an outside space, the ballast tubes having fill material solids on their respective inside spaces; and

(c) a plurality of longitudinally spaced reinforced regions along the length of the elongated container, the reinforced regions being supportive of the elongated container and providing a greater resistance to stress than the fabric of the container.

43. The apparatus of claim 42 additionally comprising:

(d) a longitudinal belt, the belt being secured to the longitudinally spaced reinforced regions, thereby providing additional stability to the barrier.

45. An apparatus for forming a barrier, comprising:

a) an impermeable elongated fabric container having an interior and an exterior;

b) at least two ballast tubes disposed within the interior of the elongated fabric container, each of the at least two ballast tubes containing water; and

c) wherein each of the at least two ballast tubes is configured to be semi-permeable so that the water can pass between each of the at least two ballast tubes and the interior of the container and between one of the at least two ballast tubes and the other of the at least two ballast tubes.

46. The apparatus of claim 45, wherein the container is rendered impermeable by a coating applied to the fabric.

47. The apparatus of claim 46, wherein the coating is applied to the exterior of the container.

57. The apparatus of claim 52, wherein each reinforced region extends once circumferentially around the container and in a direction that is generally transversely to the longitudinal axis of the container.

58. The apparatus of claim 52, wherein each reinforced region extends helically around the circumference of the container.

59. The apparatus of claim 52, wherein at least one reinforced region comprises at least two thicknesses of fabric.

60. The apparatus of claim 52, wherein the reinforced regions are disposed on the outside of the container.

61. The apparatus of claim 52, wherein the reinforced regions are disposed on the inside of the container.

62. An apparatus for forming a barrier, comprising:

a) an elongated fabric container having two ends and a plurality of ballast tubes within the elongated fabric container; and

b) a plurality of transverse reinforced regions along the length of the elongated container, the transverse reinforced regions being configured to provide structural support to the container.

63. The apparatus of claim 62, wherein each said transverse reinforced region comprises at least one hoop.

64. The apparatus of claim 62, wherein each transverse reinforced region comprises at least one anchoring strap.

65. The apparatus of claim 62, wherein each reinforced region comprises at least one rib.

66. The apparatus of claim 62, wherein at least one reinforced region comprises at least two thicknesses of fabric.

67. The apparatus of claim 62, wherein each of the transverse reinforced regions comprises at least one anchoring strap.

68. The geotube barrier of claim 67, wherein each of the anchoring straps is connected by a longitudinal seam extending along the length of the elongated container.

69. The apparatus of claim 62, wherein the tube is constructed by seaming together the container at the transverse reinforced regions.

70. The apparatus of claim 62, wherein the reinforced regions are disposed on the outside of the container.

71. The apparatus of claim 62, wherein the reinforced regions are disposed on the inside of the container.

72. The apparatus of claim 62, further comprising at least two ports defined along the length of the container.

76. A cylindrical geotube water barrier having an inner surface formed by longitudinal seaming, comprising:

an elongated fabric container having two ends and at least two seams, the container being formed by joining together at one of said at least two seams at least two cylindrical tubular sections to form a transversely oriented reinforced region along the length of the geotube, the transverse reinforced region being configured to provide structural support to the geotube container with a high resistance to mechanical damage; and

at least one ballast tube disposed on the inner surface of the container.

77. The cylindrical geotube water barrier of claim 76, wherein the reinforced regions comprise anchoring straps.